

Notice of Allowability

Application No.

10/774,296

Examiner

Marguerite J. McMahon

Applicant(s)

POOLA ET AL.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Amendment filed 3/28/07.
2. ☒ The allowed claim(s) is/are 1,3,5-7,9 and 18.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

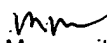
Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☐ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____


Marguerite McMahon
Primary Examiner
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REASONS FOR ALLOWANCE

The following is an examiner's statement of reasons for allowance: The prior art fails to teach or fairly suggest the claimed invention as a whole including are-entrant angle is measured clockwise from the plane, and wherein the re-entrant angle is selected from a range of about 50 degrees to about 77 degrees, the maximum bowl radius is selected from a range of about 87mm to about 94 mm, the minimum bowl radius is selected from a range of about 77 mm to about 89 mm, the maximum bowl depth is about 30 mm, the lower curve radius is about 10mm, the upper curve radius is about 6mm, and the piston crown diameter is about 263 mm, in the context of an internal combustion engine comprising: a piston crown for a piston of a large-bore a piston crown, said piston crown having a centerline and a diameter of at least 180 millimeters; a crown bowl formed in said piston crown, said crown bowl having a bowl sidewall, said bowl sidewall defining, with respect to the centerline, a maximum bowl radius and a minimum bowl radius; a piston squish face circumscribing said crown bowl; and a cooling chamber positioned below said piston squish face and in relation to said bowl sidewall; wherein said bowl sidewall has an acute re-entrant angle relative to said piston squish face, wherein said maximum bowl radius exceeds said bowl edge radius, and wherein said maximum bowl radius is disposed further from said squish face than said minimum bowl radius is disposed from said squish face, wherein said crown bowl further includes a maximum bowl depth, wherein said crown bowl further includes a substantially frustoconical inner surface extending between the maximum bowl depth and the centerline, wherein a lower curve radius defines a lower curve of said crown

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bowl, wherein an upper curve radius defines an upper curve of said crown bowl, and wherein a sidewall tangent is formed by an intersection of the upper and lower curve radii, wherein the sidewall tangent defines an orientation of said bowl sidewall; and wherein said re-entrant angle is defined by an intersection of the sidewall tangent with respect to a plane parallel to said squish face, wherein said re-entrant angle is measured clockwise from the plane, and wherein the re-entrant angle is selected from a range of about 50 degrees to about 77 degrees, the maximum bowl radius is selected from a range of about 87mm to about 94 mm, the minimum bowl radius is selected from a range of about 77 mm to about 89 mm, the maximum bowl depth is about 30 mm, the lower curve radius is about 10mm, the upper curve radius is about 6mm, and the piston crown diameter is about 263 mm.

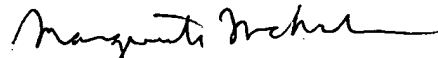
Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marguerite J. McMahon whose telephone number is 571-272-4848. The examiner can normally be reached on Monday-Wednesday and Friday, 10am-6:30pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steve Cronin can be reached on 571-272-4536. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Marguerite McMahon
Primary Examiner
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